Air Quality Permitting
Statement of Basis

December 7, 2004

Tier II Operating Permit and Permit to Construct No. T2-010208

Bennett Lumber Products, Inc.
Princeton, Idaho
Facility ID No. 057-00008

Prepared by:

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Air Quality Division

FINAL

Table of Contents

Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
BDT	bone dry tons
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
EQM	Environmental Quality Management
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
MACT	Maximum Available Control Technology
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards For Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTE	potential to emit
SIP	State Implementation Plan
SO_2	sulfur dioxide
TAPS	toxic air pollutants
TEQ	toxic equivalent
T/yr	tons per year
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 404 and 200, *Rules for the Control of Air Pollution in Idaho* for Tier II operating permits. This Tier II operating permit and permit to construct (PTC) is required by the Bennett Lumber Products, Inc. (Bennett Lumber) Tier I operating permit as part of the facility's compliance plan.

2. FACILITY DESCRIPTION

Bennett Lumber is a saw and planing mill that manufactures dimensional lumber. The facility is located in Princeton, Idaho. There is one sawmill and two planing mills. The boiler operates continuously except during one week of shutdown for maintenance.

Logs are sorted, debarked, squared, and finally reduced to dimension lumber. Most lumber is dried to a pre-determined moisture level in a series of steam-heated kilns before being sent to the planing mill for surfacing and final finishing.

Bennett Lumber's production varies, but the operation is capable of producing approximately 102 million board feet of lumber annually. The permit assumes annual rates of 102 million board feet lumber scale and 60 million board feet log scale.

3. FACILITY/AREA CLASSIFICATION

Bennett Lumber is defined as a major facility in accordance with IDAPA 58.01.01.008.10 for Tier I permitting purposes because the facility has the potential to emit (PTE) CO at over 100 T/yr. The facility is not a Prevention of Significant Deterioration (PSD) major source because emissions do not exceed the PSD threshold of 250 T/yr. The AIRS classification is "A" because potential emissions of CO are greater than 100 T/yr. The AIRS information is provided as Appendix C.

Bennett Lumber is located in Latah County, Idaho, in Air Quality Control Region (AQCR) 62. The area is classified attainment or unclassifiable for all federal and state criteria air pollutants.

4. APPLICATION SCOPE

Bennett Lumber was issued an initial Tier I Operating Permit on May 15, 2001, which contains a compliance schedule to bring the facility into compliance with applicable Permit to Construct requirements. The schedule requires Bennett Lumber to submit a Tier II Operating Permit application no later than June 30, 2001.

Bennett Lumber's emissions are mainly from one boiler, six kilns, and woodworking processes controlled by seven cyclones and one baghouse.

This following equipment was constructed without a PTC:

- Log debarking system
- Log sawing system
- New planer mill
- Hog fuel/truck bin
- Truck shavings bin
- Truck sawdust bin

- Truck chip bin
- Boiler fuel storage building
- Kiln #1 Lumber Systems 73 foot double track dry kiln
- Kiln #2 Moore 73 foot double track dry kiln
- Kiln #3 Lumber Systems 73 foot single track dry kiln
- Kiln #4 Lumber Systems 73 foot double track dry kiln
- Kiln #5 Lumber Systems 73 foot double track dry kiln
- Kiln #6 Lumber Systems 73 foot double track dry kiln
- Seven cyclones and one baghouse

This application contained information about the facility's boiler. Although a PTC was issued for the boiler it was included in Bennett Lumber's permit application. The unit is a Zurn Industries, Erie City boiler. The boiler is a Type C three drum water tube type rated at 60,000 pounds of saturated steam per hour. This permit will modify the PTC issued June 1, 1977, for the boiler.

4.1 Application Chronology

- June 30, 2001 — Tier II application received
- April 8, 2003 — DEQ issued Bennett Lumber a draft Tier II operating permit
- April 15, 2003 — DEQ received comments from Bennett Lumber on the draft permit
- October 17, 2003 — DEQ received an updated dispersion model
- November 21, 2003 — DEQ received an updated emissions inventory
- December 5, 2003 — DEQ received an updated PM_{10} dispersion model
- May 6, 2004 — DEQ received an addition updated PM_{10} dispersion model
- May 19, 2004 — DEQ received an additional emissions inventory update

5. PERMIT ANALYSIS

This section of the statement of basis describes the regulatory requirements for this Tier II operating permit and permit to construct.

5.1 Emissions Inventory

Table 1.1 below lists the sources of emissions that are regulated in this Tier II operating permit and permit to construct.

Table 5.1 EMISSIONS SOURCES

Permit Section	Equipment	Control
3	Zurn Industries, Erie City hog-fuel boiler	Multiclone, Wet Scrubber
4	Drying Kilns	None
5	Woodworking Equipment	Cyclones, Baghouse

Boiler Emissions

Particulate matter (PM) and particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers (PM_{10}) emissions are based on source test results. Emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), and volatile organic compounds (VOC) from the hog fuel boiler were estimated using AP-42 emissions factors. Although not required by this permitting action, the applicant and Environmental Quality Management Inc. (EQM) estimated emissions of toxic air pollutants (TAPs) from the hog fuel boiler. DEQ did not review the toxic pollutant emissions estimates submitted by the applicant. The applicants emissions estimate is contained in Appendix A.

Drying Kilns

Emissions from the drying kilns are based on DEQ emissions factors for the Idaho wood industry. The PM_{10} and VOC emissions are based on the quantity of boards dried. The emissions calculations are contained in Appendix A.

Cyclones

Emissions from the cyclones are based on DEQ emissions factors for the Idaho wood industry. The emissions estimate is for PM, and assumes high efficiency cyclones. The emissions estimate is contained in Appendix A.

Emissions Limits Summary

Table 5.2 SUMMARY OF EMISSIONS LIMITS

Bennett Lumber Products Inc., Princeton Emission Limits[a] – Hourly (lb/hr), and Annual[b] (T/yr)								
Source Description	PM_{10}[c]		NO_x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Zurn Industries, Erie City Hog-Fuel Boiler	13.7	58.5	11.8	50.4	32.1	137.4	--	8.7
Dry Kilns	--	9.2	--	--	--	--	--	72.9
Cyclones	5.2	9.0	--	--	--	--	--	--

[a] As determined by a pollutant-specific EPA reference method, a DEQ-approved alternative, or as determined by DEQ's emissions estimation methods used in this permit analysis.

[b] As determined by multiplying the actual or allowable (if actual is not available) pound per hour emission rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

[c] Includes condensables.

5.2 Modeling

A report on the modeling conducted by EQM and approved by DEQ is presented in Appendix B. Minor changes were made to some stack parameters and emissions rates by the applicant after EQM prepared their report. The details of these changes can be found in the application materials. The PM_{10} 24-hour concentration is based on rural agricultural areas in Idaho and is a conservative estimate of the PM_{10} concentrations in the Princeton area. The following table is a comparison of the final modeled concentrations for PM_{10}, CO, and NO_X with the national ambient air quality standards (NAAQS):

Table 5.2 SUMMARY OF MODELED CONCENTRATIONS

Bennett Lumber, Princeton Modeled Concentrations					
	PM_{10}		CO		NO_x
Averaging Period	24-hr	Annual	1-hr	8-hr	Annual
Concentration ($\mu g/m^3$)	55	7.4	1624	425	4.5
Background Concentration ($\mu g/m^3$)	74	26	11450	5130	40
Total ($\mu g/m^3$)	129	33.4	13074	5555	44.5
NAAQS	150	50	40,000	10,000	100

5.3 Regulatory Review

The following rules were reviewed in this permitting analysis:

IDAPA 58.01.01.201 ..... Permit to Construct Required

The dry kilns and cyclones emit air pollution in quantities that require a PTC. These units were constructed without a PTC. This permit incorporates the requirements of IDAPA 58.01.01.201-228 for the emissions units constructed without a PTC.

IDAPA 58.01.01.210 ..... Demonstration of Preconstruction Compliance with Toxic Standards

All of the units that emit toxic pollutants were constructed prior to Idaho's toxic rules.

IDAPA 58.01.01.401 ..... Tier II Operating Permit

This Tier II operating permit is required by Bennett Lumber's Tier I operating permit. This permit is being issued for the units which did not obtain a PTC prior to construction. This permit contains all of the applicable PTC requirements for those units, as well as emissions limits to protect the NAAQS.

40 CFR 60..... Standards of Performance for New Stationary Sources

The applicant indicated that the boiler was constructed or last modified prior to June 9, 1989. Therefore, the boiler is not subject to NSPS requirements in accordance with 40 CFR 60.40c.

IDAPA 58.01.01.205 ..... Permit Requirements for New Major Facilities or Major Modifications in Attainment or Unclassifiable Areas.

The applicant submitted emission estimates for the hog fuel boiler, using 1998 AP-42 emission factors, indicating potential CO emissions exceeding 300 T/yr. Since the boiler was installed in 1978, this could have triggered PSD review under 40 CFR 52.21 (the EPA PSD rules were in effect at the time prior to adoption of Idaho PSD rules). However, based on currently available CO emissions factors from AP-42, Bennett Lumber was not a PSD major source (potential emissions exceeding 250 T/yr for any PSD pollutant) at the time the boiler was installed.

Using current AP-42 emission factors, the potential emissions of CO are 150 T/yr; therefore, absent better information, the boiler should not be considered to have triggered PSD.

5.4 Fee Review

A Tier II processing fee will not be required for this permit according to stationary source program policy. The policy states that a Tier II processing fee only applies for applications received on or after February 15, 2002, and the Tier II permit is issued on or after July 1, 2002. The Bennett Lumber Tier II operating permit application was submitted on June 30, 2001, therefore, processing fees do not apply.

6. PERMIT CONDITIONS

General Conditions

The general permit conditions in this Tier II operating permit are minimal because the existing Tier I operating permit already contains most of the general conditions.

The permittee is required to maintain sufficient records to ensure compliance with all of the terms and conditions of the permit.

Zurn Industries, Erie City Hog Fuel Boiler

This Tier II operating permit includes pound per hour and ton per year emissions limits for particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), carbon monoxide (CO), and nitrogen oxides (NO_x) based on the emission estimates in Appendix A. The boiler also emits small amounts of sulfur dioxide (SO_2) and volatile organic compounds (VOCs) which do not warrant regulatory limits. The Tier I operating permit already contains provisions to operate the wet scrubber and multiclone, as well as monitor the pressure drop across each unit. Therefore, those requirements are not necessary and were not included in this permit.

In addition to the existing Tier I requirements, this permit requires the permittee to install, calibrate, and maintain a device to continuously measure the scrubbing media flow rate. This permit establishes a requirement for the facility to develop, or modify an existing, operations and maintenance (O&M) manual so that it includes the normal operating ranges for scrubbing media flow rates. The permittee is also required to monitor and record the scrubbing media flow rate once daily. Monitoring the scrubbing media flow rate, and complying with the existing terms and conditions of the Tier I operating permit assures compliance with the NO_x and SO_2 emissions limits.

Drying Kilns

This Tier II operating permit includes annual emission limits for PM_{10} and VOCs based on the emission estimates in Appendix A. The PM_{10} limit includes condensables. All PM is assumed to be PM_{10} for modeling purposes. The VOC limit is based upon the molecular weight of carbon. The dry kiln throughput is limited to 97.2 million board feet (MMbf). The facility's Tier I operating permit requires them to monitor and record the lumber throughput to the kilns. Monitoring the throughput of the kilns and complying with the existing Tier I O&M manual assures compliance with these limits.

Woodworking Equipment

The Tier II permit contains PM_{10} limits for each of five cyclones. The cyclone emission limits are based on the emission estimates in Appendix A. The PM_{10} limit includes condensables. All PM is assumed to be PM_{10}. The facility's Tier I operating permit already requires that the facility develop an O&M manual for the cyclones and baghouse. Operating the cyclones in accordance with their O&M manuals is sufficient to assure compliance with the emissions rates limits in this permit. Emissions from the baghouse and one process cyclone, emissions points P24 and P6, are not high enough to warrant regulatory limits.

7. PUBLIC COMMENT

A proposed Tier II operating permit was submitted for a 30-day public comment period from June 22, 2004, to July 22, 2004, in accordance with IDAPA 58.01.01.404.01.c. No comments were received on the proposed permit.

8. RECOMMENDATIONS

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends DEQ issue Tier II Operating Permit No. 058-00008 to Bennett Lumber in accordance with IDAPA 58.01.01.404.01.

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APPENDIX A

POTENTIAL EMISSION ESTIMATES FOR BENNETT LUMBER PRODUCTS, INC.

APPENDIX B

MODELING REPORT ANALYSIS
OF BENNETT LUMBER PRODUCTS, INC. EMISSIONS

REPORT ON MODELING ANALYSIS FOR BENNETT LUMBER, INC.

1. SUMMARY:

The criteria pollutants of concern for this project are oxides of nitrogen (NO_x), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 μm (PM_{10}), and carbon monoxide (CO). The emission screening levels in IDAPA 58.01.01585 and 586 were exceeded for 20 toxic air pollutants (TAPs) emitted from the hog fuel boiler. The modeling analysis of criteria pollutants for all non-fugitive sources at the plant demonstrated compliance with the National Ambient Air Quality Standards (NAAQS) and the acceptable ambient concentrations for the TAPs for all applicable averaging periods.

2. DISCUSSION:

2.1 Applicable Air Quality Impact Limits

This facility is located in Latah County which is designated an attainment or unclassifiable area for PM_{10}, CO, and NO_x. This Full Impact Analysis (FIA) was performed to demonstrate National Ambient Air Quality Standard (NAAQS) compliance, listed in Table 1.

Table 1. APPLICABLE REGULATORY LIMITS

Pollutant	Averaging Period	Significant Contribution Levels (μg/m³)[1,2]	Regulatory Limit (μg/m³)[3]
PM_{10}	Annual	1	50
	24-hour	5	150
CO	8-hour	500	10,000
	1-hour	2000	40,000
NO_x	Annual	1	100

[1] IDAPA 58.01.01.006.93
[2] micrograms per cubic meter
[3] IDAPA 58.01.01.577 for criteria pollutants

2.2 Background Concentrations

When conducting NAAQS modeling for non-PSD sources (i.e., Bennett Lumber), sources not explicitly included in the model are taken into account by adding a background concentration. Because DEQ does not currently measure ambient air pollutants in the area, statewide levels were used in the calculation of the total NAAQS concentration. Table 2 lists DEQ's background concentrations for a rural remote site. This modeling analysis used DEQ's old statewide background concentrations, which are more conservative than those in the table.

Table 2. AMBIENT AIR BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period		Background Concentration (μg/m³)
PM_{10}	Annual		9.6
	24-hour		43
CO	8-hour		2,300
	1-hour		3,600
NO_2	Annual		4.3

Source: DEQ – *Rural Remote Background Concentrations*

2.3 Modeling Impact Assessment

The procedures in the State of Idaho's *Air Quality Modeling Guideline* (DEQ 2002), as well as the EPA documents *Guideline on Air Quality Models* (EPA 2001) and *New Source Review Workshop Manual* (EPA 1998) were followed in conducting the modeling analysis.

The Industrial Source Complex Model, Version 3, in its short-term mode (ISCST3, Version 00101) was used in the compliance evaluation. All regulatory default options were used in the modeling. The area surrounding the facility is rural, as such the rural land use classification was used in the modeling.

The remainder of the modeling analysis describes the emission rates, source parameters, building downwash parameters, ambient air boundary, receptor network, elevation data, meteorological data, and compliance evaluation.

The short-term and annual emissions limits in the permit were used in the modeling of Bennett Lumber Permitting Project and are shown in Table 3. The stack information and area-source parameters for each source are presented in Tables 4 and 5.

The physical effluent characteristics were altered for sources P24 and KILNS1_6. Exhaust from the Baghouse stack (P24) is diverted horizontally. In order to more accurately represent this stack in the dispersion model, the exit velocity was significantly minimized (0.001 meters per second) so that upwards momentum was not credited.

The drying kiln's No. 1 through No. 6 (KILNS1_6) have 10 to 18 vents on each kiln. Rather than modeling each vent individually, the ISCST3 Model User's Manual suggests treating such a collection of rooftop sources as an area source. On all of the dry kilns, depending on fan rotation, one side of the roof vents will be fresh air intakes while the roof vents on the opposite side will be the exhausts. About every three hours in all drying schedules the fans will stop and change rotation allowing the exhaust vents to vary from side to side. The forced-air exhaust from each partially opened vent exits at 160°F. The range of the roof vent opening depends on the species of wood being dried. The range of the vent openings is anywhere between three to 12 inches. Because the exhaust of hot air and gases would generate buoyancy flux under most atmospheric conditions, additional height of release was considered.

Calculations using the SCREEN3 Model were made to estimate the additional release height from the individual kiln vents. This was done using a range of stability classes and ambient temperatures for a typical kiln simulated as a point source. The equivalent diameter of the point source was derived from a row of partially open vents. The estimated exit flow rate was calculated from the total open area times the exit velocity. Bennett Lumber provided the measurements of each vent's opening and exit velocity.

Table 3. SHORT-TERM AND ANNUAL EMISSIONS USED IN MODELING THE BENNETT LUMBER PROJECT

Emissions Source	Modeling Source ID	Hours per Year hrs	Short-Term Emissions			Annual Emissions		
			PM_{10} lb/hr	NOx lb/hr	CO lb/hr	PM_{10} T/yr	NOx T/yr	CO T/yr
Hog fuel boiler	HFBOILER	8,568	3.98	12.8	35.0	17.0	55.0	150.0
Shavings cyclone	P13	4,131	0.77			1.60		
Shavings cyclone	P14	4,131	0.77			1.60		
Sawdust cyclone	P7	4,590	0.26			0.59		
Sawdust cyclone	P11	672	0.09			0.03		
Sawdust cyclone	P12	4,131	0.76			1.56		
Sawdust cyclone	P21	4,590	0.26			0.59		
Planer shaving baghouse	P24	4,160	2.41			5.02		
Kiln No. 1		8,064	0.37			1.48		
Kiln No. 2		8,064	0.37			1.48		
Kiln No. 3		8,064	0.18			0.74		
Kiln No. 4		8,064	0.37			1.48		
Kiln No. 5		8,064	0.37			1.48		
Kiln No. 6		8,064	0.37			1.48		
Total of Kilns	KILNS1_6		2.02			8.14		

Table 4. STACK PARAMETERS FOR BENNETT LUMBER PERMITTING PROJECT

Source ID	Coordinates		Base Elevation ft	Stack Egress Parameters			
	UTMx m	UTMy m		Height ft	Temp. °F	Flow Rate acfm	Dia. ft
HFBOILER	517,394	5,195,717	2535	50.0	610	11,393	3.6
P13	517,365	5,195,740	2535	52.0	68	43,000	2.5
P14	517,415	5,195,717	2535	60.0	68	43,000	3.3
P7	517,404	5,195,717	2535	59.0	68	2,000	2.9
P11	517,302	5,195,800	2535	60.0	68	34,600	3.0
P12	517,302	5,195,800	2535	75.0	68	13,000	7.0
P21	517,438	5,195,748	2535	53.0	68	2,000	2.5
P24	517,422	5,195,763	2535	19.0	68	0.2*	1.0

* Source P24 is a horizontal stack with a flow rate of 56,307 cubic feet per minute (acfm). Because stack is horizontal no credit was given for exit velocity in the dispersion modeling.

Table 5. AREA SOURCE PARAMETERS FOR BENNETT LUMBER PERMITTING PROJECT

Source ID	Coordinates		Base Elevation ft	Release Height ft	Easterly Length ft	Northerly Length ft	Angle from North °
	UTMx m	UTMy m					
KILNS1_6	517,291	5,195,945	2535	28.5*	187	73	0.0

* The physical release height of all kiln vents is 23.3 feet. The release height was increased by 5.2 feet to consider the increased buoyancy due to the hot air and gases.

The resulting calculations using SCREEN3 showed that plume height was greatest for low wind speed and stable atmospheric conditions, while an unstable atmosphere with high wind speeds showed the lowest plume heights. As shown in Table 5, the release height (physical height of 23.3 feet plus release height of 5.2 feet) used in the modeling was based on typical summer days when high temperatures are typically above 85°F and with moderate winds. Temperatures for the remainder of the year are generally less than 85°F, thus the release height would typically be greater than 5.2 feet. The 5.2 feet increase represents a very nominal increase considering the range from 10's of feet under low wind speed conditions to a few feet under very high wind speeds. Attachment 1 includes details of this method.

Stack heights, buildings, and other structures were included in the analysis because building downwash of released emissions may influence the plumes (which will tend to bring the plume closer to the ground near the structures). The buildings used in the downwash calculations were the drying kilns, new planing mill, boiler building, sawmill, sorter building, and barker building. The elevation and location of each building was used in the Building Profile Input Program (EPA 1993) to calculate the building downwash parameters.

The ambient air boundary for this project is the also the property boundary because public access to the site is restricted by a fence. All calculations of dispersion modeling impacts occur along or near the outside of this fenced boundary.

Four sets of Cartesian grids at various spacing were arranged around the facility. Two coarse grids were spaced at 1000m and 500m. The 1000m grid extended out to 10,000m from the site, while the 500m grid extended out to 5,000m from the site. A fine grid (100m) of receptors was placed 2,500m out from the site. Ambient air boundary receptors spaced at 50m were extended out to 1,000m from the site. In addition to these grids, receptors were also placed at 25m intervals along the fenced boundary. A total of 4,329 receptors were used.

The elevations of each receptor were derived from 30m resolution Digital Elevation Model (DEM) 7.5-minute quadrangle maps for the area. The Idaho maps that were used in the analysis include Harvard, Potlatch, Princeton, Sanders, and Moscow Mountain.

Three different meteorological data sets were used to evaluate the NAAQS concentrations. The closest meteorological station to the site is 75 miles to the north in Hayden, Idaho. One full year of meteorology was assembled from April of 2000 to March of 2001 for the North Idaho Power project. That data set is called the "Meyers Ranch" meteorology. The wind pattern is characterized by a bi-nodal pattern that is consistent with the valley orientation of the Meyers Ranch site. The predominant wind direction is from the northwest about 20% of the time.

The next data set was collected at the National Weather Service's (NWS) Spokane International Airport meteorological site. It collects both surface and upper air data. The most recent five-year data set was taken from EPA's SCRAM website. This data set also shows a bi-nodal wind pattern; however, winds are primarily out of the southwest, south-southwest, and south 34% of the time compared to the Meyer's Ranch site. The other predominate wind direction is out of the northwest.

The third data set was constructed to represent the Bennett Lumber site. Bennett Lumber is located in an east-west valley that contains the Palouse River. Winds in a valley typically follow the valley orientation due to the channeling of winds caused by the steep terrain. Because no on-site data exist, the third data set was created by adjusting Spokane meteorological data set by aligning the predominate winds to the valley orientation which was a shift in every wind direction by +45 degrees.

Initial dispersion modeling runs used all three meteorological data sets to identify the level of conservativeness in the modeling results. All three data sets resulted in similar results; however, the third data set, in which the predominate winds were aligned to the valley orientation, consistently generated the least conservative results compared to the two other ones. The first two met data sets generated unrealistic situations in which winds blew emissions from Bennett Lumber against the elevated terrain of the valley walls. Because the third data set was judged to be most representative of wind conditions in the Palouse River Valley, the modeling results listed below were based on this adjusted data set.

3. *MODELING RESULTS FOR CRITERIA POLLUTANTS*

The results presented in Table 6 show that the ambient air impacts due to this project are below the NAAQS for all pollutants.

TABLE 6. NAAQS IMPACT ANALYSIS SUMMARY FOR BENNETT LUMBER PERMITTING PROJECT

Pollutant	Averaging Period	Total Ambient Impact µg/m³	Ambient Background Concentration µg/m³	Total NAAQS Concentration µg/m³	NAAQS µg/m³	Percent of NAAQS %
CO[a]	1-hour	1,686	11,450	13,136	40,000	33%
CO[a]	8-hour	413	5,130	5,543	10,000	55%
PM_{10}[b]	24-hour	56	86	142	150	94%
PM_{10}[b]	annual	8	33	40	50	81%
NO_x[c]	annual	5	40	45	100	45%

[a] carbon monoxide

[b] particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

[c] oxides of nitrogen

A summary of two ISCST3 model runs is attached. The first attachment summarizes the output of 24-hour concentrations calculated for PM_{10} in meteorological year 1987. The final one shows the output for 1- and 8-hour CO concentrations for meteorological year 1987.

3. Toxic Air Pollutants

The maximum 24-hour and annual normalized concentrations from the above modeling were used to calculate the 24-hour and annual concentrations of the 20 TAPs that exceeded their emission screening levels. The results are included in the tables in Appendix A. None of the acceptable ambient concentrations in IDAPA 58.01.01.585 or 586 were exceeded.

*** ISCST3 - VERSION 02035 ***
*** Bennett Lumber Max ST ERs from Operating Permit BENST3.BST ***
*** Model Executed on 04/08/02 at 13:37:01 ***

BEE-Line ISCST3 "BEEST" Version 8.60
Input File - C:\Beest\benST3_87_PM_TEN.DTA Output File - C:\Beest\benST3_87_PM_TEN.LST
Met File - C:\beest\met\spospo87.asc

Number of sources - 9
Number of source groups - 5
Number of receptors - 4329

*** POINT SOURCE DATA ***

NUMBER SOURCE ID	EMISSION RATE PART. CATS.	(GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
HFBOILER	0	0.50148E+00	517394.0	5195717.0	772.7	15.24	594.26	0.00	1.10	YES	
P13	0	0.97020E-01	517365.0	5195740.0	772.7	15.85	293.15	44.50	0.76	YES	
P14	0	0.97020E-01	517415.0	5195717.0	772.7	18.29	293.15	25.54	1.01	YES	
P7	0	0.32760E-01	517404.0	5195717.0	772.7	17.98	293.15	1.54	0.88	YES	
P11	0	0.11340E-01	517302.0	5195800.0	772.7	18.29	293.15	24.87	0.91	YES	
P12	0	0.95760E-01	517302.0	5195800.0	772.7	22.86	293.15	1.72	2.13	YES	
P21	0	0.32760E-01	517438.0	5195748.0	772.7	16.15	293.15	2.07	0.76	YES	
P24	0	0.30366E+00	517422.0	5195763.0	772.7	5.79	293.15	0.00	0.30	YES	

*** AREA SOURCE DATA ***

NUMBER SOURCE ID	EMISSION RATE PART. CATS.	(GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	COORD (SW CORNER) Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA SZ (DEG.)	INIT. EMISSIONRATE SCALAR VARY BY
KILNS1_6	0	0.20069E-03	517291.0	5195945.0	772.7	8.69	57.00	22.25	0.00	0.00

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL HFBOILER, P13 , P14 , P7 , P11 , P12 , P21 , P24 , KILNS1_6,
KILNS KILNS1_6,
BOILER HFBOILER,
BAGHOUSE P24 ,
CYCLONES P13 , P14 , P7 , P11 , P12 , P21 ,

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_TEN IN MICROGRAMS/M**3 **

DATE NETWORK
GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR (XR, YR, ZELEV, ZFLAG) OF TYPE GRID-ID
---------- ALL HIGH 1ST HIGH VALUE IS 74.03001c ON 87122524: AT (517182.19, 5195921.50, 773.00, 0.00) DC HIGH 2ND HIGH VALUE IS 55.71164 ON 87111824: AT (517181.91, 5195945.50, 773.10, 0.00) DC KILNS HIGH 1ST HIGH VALUE IS 74.03001c ON 87122524: AT (517182.19, 5195921.50, 773.00, 0.00) DC HIGH 2ND HIGH VALUE IS 51.43806c ON 87010824: AT (517181.91, 5195945.50, 773.10, 0.00) DC BOILER HIGH 1ST HIGH VALUE IS 26.45678c ON 87021024: AT (517158.41, 5195825.00, 772.40, 0.00) DC HIGH 2ND HIGH VALUE IS 25.07363c ON 87020424: AT (517158.41, 5195825.00, 772.40, 0.00) DC BAGHOUSE HIGH 1ST HIGH VALUE IS 37.15943c ON 87021024: AT (517182.69, 5195873.00, 772.90, 0.00) DC HIGH 2ND HIGH VALUE IS 26.35670c ON 87102224: AT (517183.31, 5195825.00, 772.50, 0.00) DC CYCLONES HIGH 1ST HIGH VALUE IS 7.18473c ON 87020424: AT (517183.00, 5195849.00, 772.70, 0.00) DC HIGH 2ND HIGH VALUE IS 6.34236c ON 87122624: AT (517475.19, 5195400.00, 805.80, 0.00) DC

*** ISCST3 - VERSION 02035 ***
*** Bennett Lumber Max ST ERs from Operating Permit BENST3.BST ***
*** Model Executed on 04/08/02 at 13:34:55 ***

BEE-Line ISCST3 "BEEST" Version 8.60
Input File - C:\Beest\benST3_87_CO.DTA Output File - C:\Beest\benST3_87_CO.LST Met File - C:\beest\met\spospo87.asc
Number of sources - 1
Number of source groups - 2
Number of receptors - 4329

*** POINT SOURCE DATA ***

NUMBER SOURCE ID	EMISSION RATE PART. CATS.	(GRAMS/SEC)	BASE STACK X (METERS)	STACK Y (METERS)	STACK ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	EXIT VEL. (M/SEC)	DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
HFBOILER	0	0.44125E+01	517394.0	5195717.0	772.7	15.24	594.26	0.00	1.10	YES	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL HFBOILER,
BOILER HFBOILER,

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

DATE NETWORK
GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR (XR, YR, ZELEV, ZFLAG) OF TYPE GRID-ID
---------- ALL HIGH 1ST HIGH VALUE IS 1685.91956 ON 87112701: AT (517179.09, 5195400.00, 786.30, 0.00) DC HIGH 2ND HIGH VALUE IS 1685.91956 ON 87112803: AT (517179.09, 5195400.00, 786.30, 0.00) DC BOILER HIGH 1ST HIGH VALUE IS 1685.91956 ON 87112701: AT (517179.09, 5195400.00, 786.30, 0.00) DC HIGH 2ND HIGH VALUE IS 1685.91956 ON 87112803: AT (517179.09, 5195400.00, 786.30, 0.00) DC

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

DATE NETWORK
GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR (XR, YR, ZELEV, ZFLAG) OF TYPE GRID-ID
---------- ALL HIGH 1ST HIGH VALUE IS 412.73291 ON 87113024: AT (517182.50, 5195897.50, 773.00, 0.00) DC HIGH 2ND HIGH VALUE IS 385.99591c ON 87020224: AT (517182.50, 5195897.50, 773.00, 0.00) DC BOILER HIGH 1ST HIGH VALUE IS 412.73291 ON 87113024: AT (517182.50, 5195897.50, 773.00, 0.00) DC HIGH 2ND HIGH VALUE IS 385.99591c ON 87020224: AT (517182.50, 5195897.50, 773.00, 0.00) DC

APPENDIX C

AIRS Table

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP [c]	PSD [d]	NSPS [e] (Part 60)	NESHAP [f] (Part 61)	MACT [g] (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2 [h]	B						A
NO_x [i]	B						U
CO [j]	A					A	U
PM_{10} [k]	B						U
PM (Particulate) [l]	SM						
VOC [m]	B						U
THAP (Total HAPs) [n]	NA						NA
			APPLICABLE SUBPART				

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

[c] State Implementation Plan
[d] Prevention of Significant Deterioration
[e] New Source Performance Standards
[f] National Emission Standards for Hazardous Air Pollutants
[g] Maximum Achievable Control Technology
[h] sulfur dioxide
[i] nitrogen oxides
[j] carbon monoxide
[k] particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
[l] particulate matter
[m] volatile organic compounds
[n] hazardous air pollutants